

**U.S. Army Corps of Engineers
Spring Valley Restoration Advisory Board Meeting
St. David's Episcopal Church
Minutes of the October 14, 2008 RAB Meeting**

RESTORATION ADVISORY BOARD MEMBERS PRESENT AT THIS MEETING	
Dan Noble	Military Co-Chair/USACE, Spring Valley MMRP Manager
Greg Beumel	Community Co-Chair
Mario Aguilar	Community Member
Mary Bresnahan	Community Member
Dr. Peter deFur	Environmental Stewardship Concepts/RAB TAPP Consultant
David Feary	Community Member
Steven Hirsh	Agency Representative - US Environmental Protection Agency Region III
William Krebs	Community Member
Lawrence Miller	Community Member
Lee Monsein	Community Member
Malcolm Pritzker	Community Member
Ambassador Howard B. Schaffer	Community Member
Bernard Schulz	American University
James Sweeney	Agency Representative - DC Department of the Environment
George Vassiliou	Community Member
Bert Weintraub	Community Member
John Wheeler	Community Member
ATTENDING PROJECT PERSONNEL	
Todd Beckwith	USACE, Spring Valley Project Manager
Ed Hughes	USACE, FUDS Program Manager
Joyce Conant	USACE, Public Affairs
Carrie Johnston	USACE, Spring Valley Community Outreach Program Manager
Maya Courtney	USACE, Spring Valley Community Outreach Program
Jessica Bruland	Earth Resources Technology
HANDOUTS FROM THE MEETING	

- I. Final Agenda
- II. Handout of Army Corps of Engineers Presentation

AGENDA

I. Administrative Items

A. Co-Chair Updates

Greg Beumel, Community Co-Chair, welcomed the group and turned the meeting over to Dan Noble.

Dan Noble, Military Co-Chair, reviewed the agenda for tonight's meeting.

B. Introduce Guests

Ed Hughes, formerly the Spring Valley Program Manager, recently accepted the position of FUDS Program Manager. He now manages all FUDS projects under the Baltimore District of USACE, including Spring Valley. He thanked the RAB members and the other meeting attendees for their continued dedication to the Spring Valley Project.

C. Announcements

D. Noble announced that minutes for the June 2008 and July 2008 RAB meetings have been posted to the project website, along with minutes for the public meeting held on January 8, 2008. In addition, the September project update was distributed by e-mail.

A meeting for the Pit 3 Shelter-in-Place community residents will be held at the Federal Property site trailer on Tuesday evening, October 28, 2008. Members of the RAB and ANC were invited to attend.

A project-wide meeting will be held on Wednesday, November 19, 2008 to provide a public update on the overall Spring Valley project.

The original date of the November RAB meeting coincides with Veterans Day, so the RAB members selected a new meeting date: Thursday, November 13, 2008 at St. David's Episcopal Church.

D. Task group updates

No task group updates were presented.

II. Community Items

A. Arsenic Issues: Chemistry, Medical Aspects and Risk Management

Dr. Lee Monsein, RAB Member, gave a presentation focusing on human health concerns and the risk analysis issues relevant to arsenic contaminated soils. He clarified that all information used in the presentation is based on his own research and reflects his own opinions. He noted that the overall message of the presentation is more important than the specific numbers.

History

Historically, arsenic was used during production of items such as bronze. Prior to the development of penicillin, arsenic was used as a medical treatment for syphilis patients. Arsenic was more recently used in making pesticides, electronics, glassware, wood preservatives, and livestock growth promoters.

Chemical Structure

L. Monsein described the chemical structure of arsenic: it is atomic number 33, its atomic weight is 74.92, and it is located in Group 15 of the periodic table. The behavior of arsenic in biological systems resembles the behavior of other Group 15 elements, such as phosphorous and nitrogen.

As a trace element, a tiny amount of arsenic is required by biological systems. Humans have been exposed since birth, and studies show that animals cannot thrive if arsenic is depleted from their systems.

Arsenic exists in many forms and interacts with biological systems differently depending on the number of electrons it possesses. Organic forms of arsenic are considered less toxic than inorganic forms.

Less toxic forms of arsenic have more chemical double bonds and high oxygen levels, which allow biological systems to dispense of it easily. Less-oxygenated forms of arsenic (with less double bonds) tend to be more potent. Arsine is a well-known example of a potent form of arsenic.

Measurements

Arsenic measurements are based on concentration. Parts per million (ppm) are equivalent to several other units of measurement, depending on the medium: 1 ug/g, 1 ug/ml, 1 mg/m³, and 1000 mg/L.

Arsenic measurements reveal the total amount of arsenic that is present. However, the proportion of non-toxic and toxic forms in a particular sample is unknown, and most of the arsenic that is present could be harmless. This makes it difficult to determine the true risk to human health and the environment.

Arsenic in the environment

Arsenic is naturally present in soil, water and air. Other arsenic sources are man-made, including pesticides, mining and ash residue from power plants.

- Arsenic occurs naturally in the earth's crust and is associated with ores and minerals. Concentrations in the crust range from 2 to 5 ppm, while concentrations in soil range from 1 to 40 ppm (with an average of 5 ppm). This naturally-occurring arsenic represents most of the arsenic found in soil, and probably explains most of the arsenic found in Spring Valley.
- Arsenic is present in water due to natural weathering of soil and rocks as well as volcanic activity. Concentrations are typically higher in areas that naturally possess elevated soil arsenic levels.
- Arsenic in air can result from volcanic activity and natural weathering of arsenic-rich soils.

Many complex interactions occur between arsenic and the environment. Arsenic from man-made materials can infiltrate air, soil and water, where it reacts with other elements and binds to soil particles. Plants can absorb arsenic, and it can be metabolized by organisms as small as microbes.

L. Monsein noted that most arsenic present in soil actually binds to and stays in soil particles. When soil is ingested, only approximately 20% of this arsenic can be absorbed by human systems.

Arsenic and human physiology

When arsenic enters the human body, it is absorbed by the lungs, nasal membranes and the GI tract. Depending on the type of arsenic, it can be metabolized by the liver or excreted primarily in urine.

Short-term arsenic exposure is measured by taking urine samples within a few days of exposure, as the half-life of arsenic in the human body is about 4 days. Long-term arsenic exposure can be measured from hair and fingernail samples. Blood samples are not effective because the half-life of arsenic in blood is 1 hour.

Arsenic exposure in humans

L. Monsein noted that the primary focus of this presentation is to reflect on arsenic exposure levels at the residential level. Acceptable exposure levels vary depending on who defines the levels. In environmental cleanup scenarios, regulators conservatively assume that most or all arsenic is harmful.

He illustrated the relatively low risk of ingesting arsenic-contaminated soil. He mixed a small amount of soil from the Lot 15/Van Ness area (currently undergoing phytoremediation) into a glass of water and drank it. As an illustration, he assumed the possibility of 20 ug of arsenic was present in the soil that he swallowed. Only 20% of this arsenic can be absorbed by the human body, so he actually absorbed a maximum of 4 ug arsenic. This small amount of total arsenic could vary in its potency depending on the type of arsenic.

L. Monsein emphasized that the largest source of arsenic consumed by humans is in food and described acceptable levels of arsenic exposure via soil, water, and food.

The goal of Spring Valley remediation is to reduce environmental arsenic exposure to below 4 ug/day, based on EPA's acceptable limit. However, people ingest more than 4 ug/day from food and water, and the acceptable FDA levels are much higher than the actual quantities normally ingested by humans. While 130 ug/day of dietary inorganic arsenic can be safely ingested over a human lifetime, the average person currently ingests approximately 30 ug/day. Similarly, the acceptable daily ingestion from drinking water is 20 to 100 ug/day, while the average person currently ingests approximately 10 ug/day.

Overall, the maximum acceptable exposure is 234 ug/day from food, water, and the environment. In total, the average person is exposed to approximately 40 ug/day via food and water. Then in theory, an additional non-dietary exposure of 194 ug/day would be safe. In order to ingest this amount of arsenic from soil, a person must consume a small amount of arsenic-contaminated soil with a concentration of 9700 ppm. This concentration is much higher than any contaminated soil in Spring Valley.

In Spring Valley, the significant cost of arsenic remediation prevents an additional exposure of 4 ug/day. This amount of arsenic does not account for only 20% absorption, and it poses very little risk to residents.

Medical

L. Monsein stated that arsenic does not directly cause cancer, because it does not break down chromosomes and is not considered mutagenic. Arsenic probably indirectly promotes cancer by interfering with the DNA repair mechanism, which normally fixes broken chromosomes caused by compounds such as medications and radiation. If the DNA repair mechanism fails, cancerous cells and tumors may develop.

The published daily arsenic exposures that cause cancer and other ailments are much higher than the acceptable exposure limits. High-risk arsenic levels, which assume consistent daily exposure over many years, include 25,000 ug/day (lung cancer), 3000 ug/day (anemia), and 300 ug/day (neurological issues).

The EPA Integrated Risk Management System (IRIS) provides two types of exposure levels: No Observable Adverse Effect Level (NOAEL) and Lowest Observable Adverse Effect Level (LOAEL). These levels are hundreds of ug/day above actual daily exposures in Spring Valley. Therefore, a large buffer exists between arsenic quantities actually ingested on a daily basis and arsenic quantities that cause severe health issues.

Relative Risk

L. Monsein shared risk formulas for developing cancer and other ailments over a 30-year period. For example, daily exposure to urban air elevated arsenic levels creates a cancer risk of about 4.3 per 10,000 people.

L. Monsein shared information to put arsenic-related risks in perspective. In comparison to common causes of fatality, the risk of death caused by arsenic exposure is negligible. The relative risk for arsenic-related cancer deaths is far lower than the relative risk for fatalities caused by automobile accidents, fires and floods. Based on normal daily human exposure levels over a 30-year period, the likelihood of an individual dying from arsenic-related cancer is similar to the likelihood of an individual dying from a lightning strike or electrocution. Other similar risks include smoking 4.6 cigarettes per year for 30 years.

Relative Cost

L. Monsein described his perspective on the relative cost per life-year saved. Relative cost per life-year saved is calculated using potential arsenic exposure risks and the cost of arsenic remediation on Spring Valley lots. It costs billions of dollars per year to prevent 1 in 10,000 people from developing arsenic-related cancer. In comparison, the relative cost of requiring shoulder seat belt usage is negligible.

The prevention level for arsenic assumes that residents ingest arsenic-contaminated soil, 100% of ingested arsenic is absorbed into the human body, all arsenic in the soil is toxic, and residents will live in Spring Valley for at least 30 years. These assumptions are very conservative and present unlikely scenarios.

Summary

L. Monsein summarized his opinions on arsenic. It is found around the world in food, air, water, and soil. Human exposure is mostly through food and water. Even moderate environmental arsenic levels do not necessarily lead to human exposure, and low-level exposure risks are almost non-existent. The link between arsenic and cancer is weak. The benefits of arsenic remediation do not outweigh the tremendous costs, and it is not the best use of monetary resources.

Question from William Krebs, RAB Member – Daily exposure levels indicate daily levels over an extremely long time period, correct?

L. Monsein confirmed that daily exposure levels are based on an extended period of time. The exact number of years has not been determined, which makes epidemiological studies difficult.

Question from W. Krebs, RAB Member – The body disposes of arsenic relatively quickly, correct?

L. Monsein said that most arsenic is excreted quickly. Some arsenic is absorbed and metabolized into non-toxic products, and the remainder is incorporated into areas of the body, such as hair and fingernails.

Question from Ginny Durrin, Audience Member – When you prepared this presentation, did you consult arsenic research that was conducted in the past decade?

L. Monsein replied that preparation of his presentation involved up-to-date statistics and general research. More specialized topics, such as research conducted at Dartmouth on arsenic effects at the cellular level, was not the focus of this presentation.

Question from Charlie Bempohl, Audience Member – You stated that arsenic does not cause cancer by breaking down chromosomes, but instead it interferes with the DNA repair system. Which arsenic component interferes with the repair mechanism: the absorbed arsenic or the rapidly-excreted arsenic?

L. Monsein stated that, to the best of his knowledge, it appears that the arsenic absorbed and incorporated into the body could interfere with the DNA repair system. The arsenic that is not absorbed, passes through the body too rapidly to cause issues.

Question from C. Bempohl, Audience Member – In that short period of time, however, does the arsenic passing through the body interfere with DNA?

L. Monsein replied that this portion of ingested arsenic does not appear to interfere with DNA prior to excretion. He pointed out that cancerous tumors are most commonly found in skin, rather than the GI tract.

Question from C. Bempohl, Audience Member – Can a small amount of arsenic interfere with DNA repair mechanisms?

L. Monsein noted that the Dartmouth Toxic Metals Research laboratory focuses on how arsenic affects cells and promotes cancer and noted that this research is described online. He encouraged audience members to check for more information there, as that study focus was not the point of the presentation.

Comment from David Feary, RAB Member – Your presentation focused on risks associated with arsenic contamination in soil. Doesn't arsenic contamination in groundwater work differently? For example, widespread illness occurred in Bangladesh due to arsenic-contaminated groundwater.

L. Monsein acknowledged this, and clarified that his presentation was geared toward most communities. The arsenic values presented tonight do not apply to areas such as Bangladesh, where high concentrations in the water were the primary source of elevated arsenic exposure. Some of the groundwater based arsenic

in Bangladesh was attributed to natural water flowing over mountain rocks that contained high arsenic levels. Man-made arsenic was not a known cause of the contamination in that location.

III. USACE Updates

A. Phytoremediation and the Residential Arsenic Removal program

D. Noble provided an update on phytoremediation and arsenic removal.

Phytoremediation

Soil samples and fern tissue samples were collected at all three phytoremediation properties during September 2008. Analysis of samples will be conducted in October, and results are expected by the end of the month. Ferns will be harvested and phytoremediation plots will be restored by early November. An update on the sampling results will be provided at the November 2008 RAB meeting.

Arsenic Removal

During September and early October 2008, significant progress was accomplished at a property on the 4900 block of Indian Lane. Soil removal was conducted for 13 grids amidst abundant landscaping and large trees. The effort for this property is approaching completion.

Site preparation activities are underway for the next three properties (4200 block of Alton Place, 4900 block of Rodman Street and 4800 block of Quebec Street). Each property contains 1-2 arsenic grids.

D. Noble showed several **photographs** featuring the extent of remediation at Indian Lane and site preparation activities (including marking arsenic grids, confirmation soil sampling and tree removal).

The arsenic removal program is nearing completion. The remaining residential properties are scheduled for completion by the first half of 2009.

Several residents have previously not granted USACE access to their properties for arsenic sampling and/or arsenic removal purposes. As discussed during the September 2008 RAB meeting, a letter will be sent to these residents to inform them that USACE's sampling and removal activities will be conducted most efficiently during the remainder of the residential arsenic removal program, when the contractor is still in the neighborhood.

The letter is currently being drafted in accordance with a recent Department of Army policy that was signed on April 26, 2007. A memo describing this policy was handed out to all RAB members. The general process was then described: If an ROE cannot be obtained by contacting a resident and explaining the benefits of arsenic testing and remediation, they will be contacted a second time for the same purpose. Upon second refusal or lack of any response from the resident, the Spring Valley project manager will officially notify regulators of our 'good faith' attempts to sample, and if needed, remediate each property.

If an ROE cannot be obtained after the second request, the property will be removed from the Spring Valley Project and placed into a new separate project. Based on documented attempts to contact residents and obtain ROEs, Army Headquarters will determine whether these properties will be funded under the separate project at some future date or be declared ineligible for FUDS funding.

One exception to this policy exists. If the U.S. Army believes that a particular property presents a certain risk level, it may ask the Justice Department for permission to enter the property. This scenario has not yet surfaced, and USACE will still be actively working in the Spring Valley neighborhood for the next couple of years. Residents should simply be aware that USACE's ability to respond to requests for arsenic soil removal after the contractor has left the neighborhood, during the project's last phases, will be more difficult.

Question from Ambassador Howard B. Schaffer, RAB Member – What reasons do residents provide for refusing access to their property?

D. Noble said that some residents do not respond to requests for property access. Others do not perceive potential contamination as a problem that deserves the large-scale response of the Spring Valley project.

C. Johnston added that many elderly residents contend that arsenic testing and potential remediation does not justify disturbances to their landscaping and their quality of life.

E. Hughes commented that these residents are typically contacted each year. Some residents have even requested that the project not contact them again.

Question from Ambassador H. B. Schaffer, RAB Member – Are there any properties where access has been denied, that you have reason to believe there are buried munitions present?

D. Noble was uncertain as to the threshold for reasonable belief that munitions are present on an inaccessible property. The procedure outlined in the policy may apply to one or two properties in the project area, if the USACE Office of Counsel agrees that reasonable belief exists.

Question from Mary Bresnahan, RAB Member – Regarding the properties that have not received arsenic testing, do you know when requests for ROEs were last sent to the residents?

E. Hughes replied that each unsampled property was initially contacted in 2001. This list of properties was reviewed each year, and the residents were contacted in multiple ways between 2001 and the present.

D. Noble added that each property will receive the drafted letter as a second chance to obtain sampling and remediation as needed.

Question from M. Bresnahan, RAB Member – Approximately how many properties have not granted access?

D. Noble said that about 35 properties require arsenic sampling. Additionally, 4 or 5 sampled properties possess arsenic levels above the cleanup goal, but they have not permitted arsenic grid removal.

Question from Peter deFur, RAB Technical Advisor – Will residents be told that FUDS funding may not be available after a reasonable time period?

D. Noble confirmed this. A copy of the policy will be included along with the letter, and each resident will be contacted to discuss the benefits of arsenic sampling and remediation.

Question from L. Monsein, RAB Member – Regarding the properties where there is reasonable belief that munitions are present, can you confirm that 1 or 2 of these properties have not granted access?

D. Noble confirmed this. The list may expand slightly if Spring Valley properties on the geophysical survey list are surveyed and then 1 or 2 of these properties refuse anomaly removal.

Question from Larry Miller, RAB Member – To clarify your answer, the policy may only apply to 1 or 2 properties with potential AUES-related hazards based on the AOIs and potential munition items that have been identified for investigation. Is this correct?

D. Noble said yes. He knows of one property, and a small number of geophysical survey properties may also refuse access. However, he is unsure if the desire to conduct a geophysical survey constitutes reasonable belief that munition items are present.

Question from L. Miller, RAB Member – This number of properties will be small compared to the number of inaccessible properties that require arsenic sampling or remediation, correct?

D. Noble confirmed this.

Question from Malcolm Pritzker, RAB Member – At what point, if any, can a government agency override the property owner's decision to refuse your request for arsenic sampling or remediation?

D. Noble said that based on the policy, this can be conducted when there is reasonable belief that high-risk conditions are present on the property.

S. Hirsh clarified that this is based on the specific policy wording written by the U.S. Army. Along with other federal agencies, they could use Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) authority to gain property access for arsenic sampling, but the U.S. Army chose to use the policy with stricter guidelines.

Question from M. Pritzker, RAB Member – In the event that potential munition items represent possible or probable danger to the community, can property access be obtained for remediation purposes?

S. Hirsh confirmed this. For example, if the Pit 3 Area property owner refused to sign the ROE, the project team's knowledge of munition items in that area could have led to government involvement and temporary forced property access. More speculative scenarios, such as refusal to allow a geophysical survey, do not necessarily constitute a threat to the community, public health or the environment.

Question from M. Pritzker, RAB Member – The threshold for gaining property access seems high. What criteria must be present for the government to conclude that a threat to the community exists?

S. Hirsh replied that EPA exercises this authority relatively frequently on commercial properties, particularly where toxic chemicals or other pollutants are leaving the property and presenting a potential public health or environmental threat. This is not typically conducted at residential properties with arsenic-contaminated soil.

Question from W. Krebs, RAB Member – When property access is obtained by the federal government, does it occur through an administrative process or through a court hearing?

S. Hirsh said that property access for sampling activities is relatively easy, and depending on the scenario, it may be accomplished either through an administrative process or a court hearing. Gaining property access is more difficult for conducting intrusive work on a property or forcing a homeowner to temporarily evacuate their home. This requires a higher level of proof of contamination, and requires that the case be taken to court. This has not occurred in Spring Valley, and a situation may not arise where the project team believes that forced access is the proper course of action.

D. Noble added that the project team will focus on obtaining ROEs prior to completion of the arsenic removal program, and the procedure outlined in the policy will be followed as required.

Question from Ambassador H. B. Schaffer, RAB Member – During the Spring Valley project, have you encountered any situations where a property owner initially refused access and later signed an ROE once they decided to sell the property?

C. Johnston confirmed that this occurs multiple times per year.

S. Hirsh described an example where a relatively large property cleanup for high arsenic levels was eventually permitted. He noted that many of the properties currently refusing access likely will eventually request sampling and remediation either once they choose to sell the property or for other reasons.

Suggestion from L. Miller, RAB Member – The letter to residents should point out that if they do not allow sampling and remediation, they cannot obtain a remediation comfort letter in the event that they choose to sell their property.

D. Noble agreed and confirmed that this is stated in the letter.

Question from M. Pritzker, RAB Member – How much would it cost for an individual property owner to hire an independent contractor to conduct arsenic sampling and remediation?

M. Bresnahan requested that this cost estimate be broken down to the cost of sampling a property.

S. Hirsh replied that the estimated cost of sampling is approximately \$2,000. The true cost depends on the property size and the extent of contamination. Residents in Spring Valley have hired independent contractors in the past.

C. Johnston added that the cost of remediation is primarily determined by the number of arsenic grids.

Question from M. Pritzker, RAB Member – Would it be appropriate to include a cost estimate in the letter sent to residents?

D. Noble expressed that this may not be appropriate. Approximately 10 percent of all sampled properties proceed to the remediation stage, suggesting that only 3 or 4 of the inaccessible properties will require arsenic grid removal. The cost estimate for each property may differ based on the number of arsenic grids present.

M. Pritzker acknowledged this. He commented that any of the 35 properties may require remediation, and the property owners have no way to determine whether their property is included. A general cost estimate in the event that their property requires remediation might effectively draw the attention of an otherwise resistant homeowner.

Comment from D. Feary, RAB Member – If a cost estimate is included in the letter, it could equate to the average cost remediation for a property, accounting for the total arsenic removal program cost and the number of remediated properties.

S. Hirsh noted that a standard price per grid exists.

D. Noble clarified that this price reflects the overall Spring Valley project cost per grid, where many properties are remediated by the same on-site contractor. An independent contractor would likely charge more per grid for a single property.

S. Hirsh added that landscaping costs, such as cutting down large trees to remove arsenic-contaminated soil, may cost tens thousands of dollars

E. Hughes estimated the cost per arsenic grid as roughly \$30,000.

Suggestion from L. Miller, RAB Member – The cost estimate does not need to be precise. It could simply state that if the property has arsenic contamination and requires remediation after the Spring Valley project is complete, it may cost tens of thousands of dollars to conduct independent activities.

The RAB agreed that including a cost estimate in the letter would attract the attention of residents.

B. Groundwater Study Plans

Todd Beckwith, Spring Valley Project Manager, presented an update on the Phase III groundwater study.

The groundwater study involves existing well sampling along with upcoming installations of 7 new wells. The work plan was submitted to the Partners in September 2008. Assuming that the work plan is finalized in November, the well installations and sampling will be conducted in early 2009. Groundwater sampling results are expected in the May 2009 timeframe.

Three (3) shallow wells will be installed to locate the source or sources of perchlorate in the groundwater, and they will extend approximately 20 to 30 feet below the water table. These wells will be located up-gradient of the well with elevated perchlorate concentrations on American University.

Four (4) deep wells will be installed to determine groundwater flow patterns and to measure whether the perchlorate has migrated into deeper sources of groundwater. These wells will extend approximately 200 feet deep.

C. Military Munitions Response Program

D. Noble provided an update on the Pit 3 Area investigation, the AU Public Safety Building investigation and the geophysical survey and anomaly removals.

Pit 3 Area Investigation – South Extension

Issues surrounding the South Extension construction details have been resolved, and the structure is complete according to the design specifications. Intrusive operations in the South Extension will begin next week (the week of October 20), and the Shelter-in-Place Zone will be in effect.

The investigation will require 1 to 2 weeks of effort. Nineteen (19) anomalies will be hand-dug. Two (2) trenches will be dug where a strong geophysical signal concentration was detected, to ensure that a cluster of items is not present. This strong signal may be caused by utility lines crossing underneath the structure.

The South Extension investigation will help determine how to approach the remaining anomalies located along the Glenbrook Road berm. Depending on the findings, these anomalies along Glenbrook Road will be removed under low-probability or high-probability conditions.

Question from P. deFur, RAB Technical Advisor – Will the South Extension trenches extend 12 feet deep?

D. Noble confirmed that the trenches will be excavated to a depth of 12 feet unless saprolite is reached before that depth, which is likely.

Question from P. deFur, RAB Technical Advisor – Will soil samples be taken at the bottom of the South Extension trenches? Floor samples are frequently taken, and concentrations of arsenic or perchlorate may be present in the floor of the South Extension.

D. Noble said the soil in the South Extension area was previously tested for arsenic. Although soil samples are not currently requested, they may be taken depending on what is found during the investigation.

Question from Ambassador H. B. Schaffer – Is the South Extension located entirely on the Pit 3 property, or does it extend onto the neighboring property?

D. Noble replied that the extension is on a portion of the neighboring property along the D.C. right-of-way.

D. Nobles showed several **photographs** of South Extension construction progress. Based on the blast experts' specifications, additional welds and sets of bolt holes were added to strengthen the structure.

Pit 3 Area Investigation – East Extension II

Site preparation activities for the East Extension II will begin after the South Extension investigation is complete. The South Extension and a portion of the Original ECS will likely be removed, which will reduce the overall containment structure size and provide some materials for constructing the new extension.

The East Extension II will be constructed over a 6-week period from early November through December 2008. The investigation will require about 8 weeks starting in early January 2009, and the Shelter-in-Place Zone will be in effect. Completion of high-probability efforts at Pit 3 is anticipated at the end of February 2009, but this depends on the results of the South and East II Extensions.

Question from P. deFur, RAB Technical Advisor – Will the entire East Extension II footprint be excavated down to saprolite similar to the first East Extension excavation?

D. Noble clarified that the East Extension II investigation will focus on the area between the house and the retaining wall where metal objects appear to be buried. The retaining wall and its footer will likely be removed. Although the structure will extend to the property boundary, a previous investigative trench along the property line was excavated between the retaining wall and the boundary. No items were found until the trench reached the original Pit 3 area.

AU Public Safety Building Project

In September 2008, excavation of Debris Area trenches continued behind the AU Public Safety Building.

All objects found to date were classified as munition debris items, scrap metal, or laboratory items. No chemical agent or explosives of concern have been found. A few bomb tail fin assemblies (not the bombs themselves) were found, similar to those found in Lot 18. An open armor-piercing nose cone was found, and a pipe with end caps was x-rayed and found to be empty. Munition debris of a 75-mm shell was also recovered.

A small pressure cylinder containing liquid was discovered, and USACE packaged the item and conducted a PINS assessment. The U.S. Army MARB held an emergency session, considered the data and determined that the cylinder was 90% filled with water.

As of the previous RAB meeting, 4 trenches were completed. An additional 4 trenches have been completed to date. Excavation of trench D2 will begin October 15. Since many AUES-related debris or scrap items were discovered in neighboring trench D1, the debris may extend into the new trench.

Overall investigation progress has been slow due to wet, muddy site conditions. The primary water source was a terra cotta pipe with water flowing into the excavation area, but the discharge from this pipe is now under control. Saturated conditions still exist in the subsurface, indicating that a second water source may be present.

Completion of this investigation is expected in Spring 2009.

Question from C. Johnston – The small pressure cylinder was not classified as a munition debris item, correct?

D. Noble confirmed that the cylinder was a laboratory item designed to contain pressurized gas.

Geophysical Survey and Geophysical Anomaly Removal Projects

As of October 6, 2008, geophysical surveys were completed on 6 properties. Prior to these surveys, USACE visited the residents to discuss any concerns, and brush clearance was conducted as necessary. Seven (7) additional properties will be surveyed in the late Fall or early Winter.

D. Noble showed two **photographs** that featured survey grid setup activities.

Anomaly removals are planned for 13 residential properties whose geophysical surveys are complete. Initial site visits have been completed for 11 properties. The remaining visits are scheduled for this week.

By the end of 2008, anomaly removals should be complete for 3 Glenbrook Road properties whose work plans are in the draft final stage. These investigations should conclude all low-probability work on these properties.

D. Noble showed two **photographs** of site visits, where Community Outreach personnel discussed the purpose and impacts of geophysical anomaly removals with residents.

C. Johnston provided examples of efforts conducted during site visits with residents. Landscaping issues are often discussed, such as the identification and preservation of expensive and irreplaceable vegetation. Information on underground utilities such as water pipes, as well as other items like old buried swimming pools, is collected to ensure that anomaly removals do not focus on irrelevant cultural items. The goal is to minimize impacts on each property and preserve the landscape quality.

D. Spring Valley FUDS Project Schedule Update

Todd Beckwith, Spring Valley Project Manager, presented an overview of the projects planned for FY2009, FY2010 and FY2011. The scheduled dates reflect the timeframe in which funding is expected for each project, not the anticipated project completion dates.

In **FY2009**, with a budget of \$11 million dollars, funding is planned for the following projects.

- Geophysical and anomaly investigations – 33 residential properties; 3 Dalecarlia Woods federal lots

- Pit 3 Area investigations – South and East II Extensions; test pits; munitions disposal
- American University – Public Safety Building; main campus exploratory trenches in ground scars
- Arsenic soil removal – 36 residential properties
- Phytoremediation – as needed (based on the 2008 phytoremediation results)
- Groundwater monitoring – ongoing
- Area of Interest (AOI) sampling – as needed (based on decisions of the Spring Valley Partners)
- Site-wide Remedial Investigation and Feasibility Study (RI/FS) – incorporates all field work completed to date, evaluates alternatives as necessary and promotes future project closure

In **FY2010**, with a budget of \$11 million dollars, funding is planned for a reduced number of projects. All anomaly investigations will be completed on residential properties and on Dalecarlia Woods Federal lots. Phytoremediation and AOI sampling will be conducted as needed, along with groundwater studies. Development of the Site-wide Remedial Investigation and Feasibility Study (RI/FS) will continue.

In **FY2011**, with a budget of \$3 million dollars, funding is planned for the Site-wide Remedial Investigation and Feasibility Study (RI/FS) Report, the Proposed Plan, and the final Decision Document.

T. Beckwith noted that most field work should be complete by FY2011, and the \$3 million dollar budget should be sufficient for FY2011 tasks.

Comment from P. deFur, RAB Technical Advisor – This schedule assumes that no surprises are found during planned investigations, and the schedule may change based on future discoveries.

D. Noble agreed.

IV. Open Discussion and Agenda Development

A. Next Meeting: Thursday, November 13, 2008

The normal RAB meeting schedule was altered for November 2008 because the originally-scheduled meeting coincides with Veterans Day. The meeting location is still at St. David's Episcopal Church.

B. Future agenda topics

- History of Chemicals and Munitions used in WWI and AUES (tentatively scheduled for November 2008)
- Superfund Risk Assessment Process Overview (tentatively scheduled for January 2008)
- Brief on the Dalecarlia Woods Wide Area Assessment and Federal Lot Investigations to Date (tentatively scheduled for January 2008)
- Johns Hopkins University (JHU) Presentation on Draft Work Plan for Health Study Update (schedule to be determined, as Councilwoman Cheh's office will notify the RAB when they anticipate that JHU is ready to proceed with a presentation)
- Groundwater Monitoring Results (tentatively scheduled for spring 2009)

Comment from L. Monsein, RAB Member – Based on my opinions regarding arsenic contamination and remediation in Spring Valley, people may wonder why I have been involved with the RAB for so many years. My intent is to ensure that the RAB is conducted correctly. I am pleased with how well the meetings have functioned recently, and how the RAB is proceeding forward with the Spring Valley project. He complimented RAB members and the Spring Valley Community Outreach team.

Suggestion from P. deFur, RAB Technical Advisor – If the RAB members are interested, a presentation on the groundwater monitoring study could be held in Spring 2009 prior to presenting the results.

The RAB agreed that a presentation explaining how the groundwater study works would be interesting.

Suggestion from L. Monsein, RAB Member – Regarding water treatment in D.C., there have been concerns about potential mixing of water sources and the eventual fate of treated water. Originally, the groundwater perchlorate issue revolved around the efflux of drains surrounding the water treatment drains. A presentation could discuss the origins, the fate and other aspects of the D.C. water supply.

D. Noble agreed. USACE works with drinking water systems in D.C., and a speaker from the Washington Aqueduct may be available.

C. Final Announcements

D. Noble announced that the binder containing finalized Area of Interest (AOI) reports is available for public viewing after the meeting. The copy originally placed in the information repository at the Palisades library went missing shortly after it was placed there, but has been replaced with a second copy. A total of 23 AOI reports have been finalized, and 5 reports are still in draft form. This should clarify incorrect information provided during the last meeting regarding the number of AOI reports that remain unsigned.

V. Public Comments

Question from Allen Hengst, Audience Member – Regarding the AOI reports that are available for public viewing, does the binder only include finalized reports that require no further action?

Maya Courtney, Spring Valley Community Outreach, said it was her understanding that approximately 8 reports are included in the binder. Other signed AOI reports that may still require intrusive work on properties are not included in the binder.

[Editor's Note: The correct number of reports in the binder as of October 2008 was 9 reports.]

C. Johnston further explained that additional work may still be required on properties in or around these AOIs. Privacy of the property owners is an issue. These reports will not be included in the binder until no further work is required on the properties in the AOI.

Question from C. Bermpohl, Audience Member – It is my understanding that an arsenic level of 400 ppm was found at a residential property, but the owner refused property access for arsenic removal. Is the U.S. Army responsible or liable for informing new property owners who purchase the property in the future?

D. Noble replied that the current homeowner is responsible for disclosing the presence of known arsenic contamination on their property.

M. Bresnahan clarified that although the property owner is responsible for disclosure according to the D.C. legal code, USACE is required to disclose information if a realtor contacts the Spring Valley project to verify information regarding past and present contamination on the property.

G. Beumel, D. Noble and S. Hirsh agreed that if a realtor inquired as to the property's sampling results, this information would be provided.

Question from M. Bresnahan, RAB Member – Does USACE require the homeowner's permission to disclose information about the property to a realtor?

C. Johnston confirmed this.

Multiple RAB members asked for clarification, as sampling results are considered public information.

C. Johnston noted that when a realtor contacts them for disclosure information, they ask for a copy of the closure letter or sampling results letter that was provided to the homeowner. If the realtor can provide

their signed portion of the contract with the homeowner, or they can provide the homeowner's phone number, then the Community Outreach Team will obtain the homeowner's permission to provide this letter to a realtor. This scenario has never presented any issues.

L. Monsein commented that a copy of this letter may provide more official documentation for the realtor, but the prospective buyer and the realtor can also view sampling results that are accessible to the public.

D. Noble added that most sampling results are included in the publicly-available EE/CA report.

Question from M. Pritzker, RAB Member – If a contaminated property is placed on the market without using a realtor, who is responsible for disclosing any hazardous property conditions? Someone must be responsible for warning the prospective buyer before they purchase the property.

L. Monsein confirmed that the owner still holds responsibility, whether a realtor is used or not.

W. Krebs commented that the D.C. regulations do not specifically indicate that the Spring Valley project must disclose property information. However, any actual knowledge of contamination must be disclosed to potential buyers, and this may include federal agencies. The issue regarding disclosure responsibilities of USACE or EPA probably depends on the specific wording of the property ROE.

S. Hirsh noted that if a prospective buyer contacts EPA to inquire about a Spring Valley property, the sampling, investigation and remediation activities on the property are discussed. Activities on adjoining properties may also be discussed, to provide them with a general sense of the property's safety.

Question from M. Pritzker, RAB Member – Future issues may arise once USACE has left the neighborhood. At that point, prospective buyers may not be familiar with the history of Spring Valley. What if a homeowner chooses to sell a contaminated property without disclosing any information, and they do not use a realtor?

L. Miller agreed that a homeowner would probably not use a real estate agent if they knew their property was contaminated. They would sell it independently, or possibly find a new realtor who is unfamiliar with the area. Selling the property without disclosure would constitute simple fraud. USACE would not be held responsible for disclosure, as they cannot be expected to track all home sales in the Spring Valley.

W. Krebs commented that this scenario assumes the buyer does not use a realtor with knowledge of Spring Valley.

M. Bresnahan agreed. Most real estate agencies in the Spring Valley area are aware of the disclosure requirements and they will require an addendum at the time of sale.

Question from K. Slowinski, Audience Member – Regarding progress at the Pit 3 Area investigation, has anyone attempted to contact the workers who actually conducted the excavation for the house foundation? Does the Spring Valley Project intend to pursue information from these workers?

D. Noble replied that the workers have not been contacted, and there are no plans to do so.

S. Hirsh added that a letter will be sent to the developer who was in charge of the excavation and foundation work.

Question from K. Slowinski, Audience Member – You noted that a pressurized cylinder discovered at the Public Safety Building had its contents examined using PINS analysis. What will happen to the cylinder? The reason I ask is that I believe the PINS analysis misidentified the contents of arsine shells as vomiting agent. Does the laboratory at Edgewood have any plans to conduct additional sampling on this cylinder?

D. Noble said that the item was returned to the federal property. It will be disposed of with other waste.

Question from K. Slowinski, Audience Member – Can you show an aerial photograph of the ground scars that will be investigated on the AU main campus?

D. Noble agreed that when the investigation is funded, an aerial photograph can be shown and the planned trench locations will be discussed.

Question from K. Slowinski, Audience Member – Have the ground scars on the AU main campus been identified as possible or probable burial pits, and were they detected from a particular aerial photograph?

P. deFur replied that the ground scars were evident on a 1918 aerial photograph but there was no specific explanation for the ground scars.

Comment from A. Hengst, Audience Member – The meeting minutes for recent Spring Valley Partnering meetings have not been posted on the website since November 2007.

D. Noble confirmed that recent meeting minutes will be posted in the near future, and that Community Outreach is actively working on preparing the minutes for the website.

Question from K. Slowinski, Audience Member – When do you anticipate that these meeting minutes will be available?

D. Noble replied that the meeting minutes should be posted soon.

Community Outreach added that the entire Spring Valley FUDS website is currently being reorganized.

Comment from A. Hengst, Audience Member – Why is the video showing the interior of the Pit 3 Original ECS is no longer on the website? It was interesting.

Joyce Conant, USACE-Baltimore Public Affairs, confirmed that it was removed from the website.

Question from K. Slowinski, Audience Member – Will the presentation on the Superfund Risk Assessment Process Overview include a discussion of Conceptual Site Models (CSMs)?

G. Beumel confirmed that this presentation would be the appropriate context in which to discuss CSMs.

S. Hirsh added that his colleague can discuss general information on CSMs.

Question from K. Slowinski, Audience Member – During a future RAB meeting, would it be possible to include a discussion of other chemicals detected in Spring Valley?

S. Hirsh commented that this is a broad request, as L. Monsein's arsenic presentation took approximately 45 minutes.

K. Slowinski replied that a follow-up discussion on other chemicals would be appreciated, as concentrations of chemicals other than arsenic have been detected in Spring Valley.

S. Hirsh said that during the Superfund Risk Assessment Process Overview presentation, his colleague can present a table of information on other chemicals detected in Spring Valley, as well as answer questions regarding these chemicals.

VI. Adjourn

The meeting was adjourned at 9:11 PM.